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PROVISIONAL SPECIFICATION.

Improvements in the Fork-ends of Cycles.

I, ROBERT FREDERICK HALL, Managing Director of R. F. Hall, Limited, of Sherlock Street, in the City of Birmingham, do hereby declare the nature of this invention to be as follows:—

This invention relates to the back-fork-ends or jaws of cycles.

- 5 According to my improvements, the said back-jaws or fork-ends, wherein the ends of the back wheel axle or spindle is mounted, is made in two longitudinal halves or opposed parts, one being fixed to the outer end of the chain stay by brazing or otherwise and the other half being similarly secured to the adjacent lower end of the seat stay. These two halves are recessed or chambered out on their inner opposed
- 10 faces or sides so as to form an internal chamber adapted to accommodate the chain adjusting draw bolt which is partly enclosed or secreted between them. The spindle of the hub axle is then passed through coincident holes in the two opposed halves and also through a like piercing in the plate or block end of the chain adjusting bolt (which is located between them) and is there secured by nuts
- 15 screwing on the outer ends of the said spindles and bearing upon the outside surfaces of the outer cheeks of the sectional fork end, thereby locking all the parts together. The chain bolt is adjusted by being drawn up by a nut in the usual way.

Dated this 17th day of September 1897.

ROBERT FREDERICK HALL,
By Henry Skerrett,
Agent for Applicant.

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COMPLETE SPECIFICATION.

Improvements in the Fork-ends of Cycles.

- I, ROBERT FREDERICK HALL, Managing Director of R. F. Hall, Limited, of
- 25 Sherlock Street, in the City of Birmingham, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to the back fork ends or jaws of cycles.

- According to my improvements, the said back jaws or fork-ends, wherein the ends
- 30 of the back wheel axle or spindle is mounted, is made in two longitudinal halves or opposed parts, one being fixed to the outer end of the chain stay by brazing or otherwise and the other half being similarly secured to the adjacent lower end of the seat stay. These two halves are recessed or chambered out on their inner opposed faces or sides so as to form an internal chamber adapted to accommodate the chain

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adjusting draw bolt which is partly enclosed or secreted between them. The spindle of the hub axle is then passed through coincident holes in the two opposed halves and also through a like piercing in the plate or block end of the chain adjusting bolt (which is located between them) and is there secured by nuts screwing on the outer ends of the said spindles and bearing upon the outside surfaces of the outer cheeks of the sectional fork end, thereby locking all the parts together. The chain bolt is adjusted by being drawn up by a nut in the usual way. 5

Figure 1 of the accompanying drawing represents in side elevation, the left-hand side fork end of a safety bicycle constructed according to my invention.

Figure 2 is a complete longitudinal vertical section of the same.

Figure 3 is a transverse vertical section of Figure 2, upon the dotted line *x*, and 10

Figure 4 is a transverse longitudinal section thereof upon the dotted line *x*¹.

Figure 5 is a similar section to Figure 3, of the said fork end, but with the chain adjusting fittings removed and the longitudinal halves separated to a short distance.

Figure 6 represents, in plan, the component halves of the fork end, and the chain adjusting draw bolt (the head of which is in section) bearing end cap or plate and adjusting nut separated. 15

Figure 7 is a plan of the improved fork end, with the chain adjusting fittings in position.

Figure 8 is an elevation of the inner side of that element or sectional part of the fork end which is secured to and carried by the chain stay member of a cycle, showing how the inner face is recessed out to form one half of the chamber which receives the head of the chain adjusting draw bolt. 20

Figure 9 represents a like view of the inner and recessed out side of the other half of the said end, which is brazed or secured to the lower end of the framing back stay. 25

The same letters of reference indicate corresponding parts in the several figures of the drawing.

a is a fork-end or back jaw fitting, two of which are employed in connection with a bicycle, one on either end of the rear wheel axle, which is supported thereby. 30 Each fork end consists of two longitudinal halves or sections *b* and *c*, the former being provided with a lug *b*¹, adapted to receive, and be connected by brazing or otherwise to the lower end of, one of the back stays *d*, of the framing of the machine, whilst the other half or section *c*, has a similar lug *c*¹, by which it is connected with the rearward end of one of the chain stays *e*. The inner face of the back stay half *b*, which, in the form shown, comes innermost, is recessed at *b*², throughout its whole length; whilst a longitudinal closed-ended slot *b*³, is formed through its walls and through which the axle *f*, of the hub *g*, of the back wheel, passes. The inwardly presented face of the chain stay and outermost section *c*, is coincidently chambered or recessed at *c*², and slotted at *c*³, the rear end *c*⁴, of the said slot being open to admit 35 of the wheel axle being passed longitudinally therein, the arrangement being such that when the two said sections *b* and *c*, are placed together, with their opposed faces in contact, the coincident recesses *b*², *c*², form an internal box like chamber *h*, within which is located the head end *i*¹, of the chain adjusting draw bolt *i*, the said head having a transverse hole *i*², coinciding with the slots *b*³, *c*³, and through which the axle passes, whilst the screwed tail end *i*³, receives a sleeved nut *j*, the shoulder *j*¹, of which comes upon the outer side of a bearing cap or plate *k*, having flanges *k*¹ at the top and bottom adapted to take over shoulders *b*⁵, *c*⁵, on the rearmost ends of the fork end sections, so that by the rotation of the said nut (the sleeve of which passes through the central hole *k*², in the bearing cap) the draw bolt is traversed, 40 drawing the wheel axle along with it and so adjusting the tension of the driving chain. 50

m is a locking nut, taking and screwing upon the extending end *f*¹ of the axle, and by the screwing up of which the back jaw sections are forced together and clamped up against the shoulder *f*², or other equivalent abutment on the wheel axle, thereby rigidly securing the whole of the elements together, making the connection 55 of the back stay to the chain stay, and at the same time, clamping the back wheel

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axle to the back jaw or fork end in its adjusted position. On the other hand, when the nuts *m*, on each end of the axle are unscrewed, and the upper end connections of the back stay unfastened, the said back stay and the sections of the fork ends carried by them may be withdrawn rearwardly from the machine carrying the axle and
5 wheel away with them.

Instead of employing a nut for locking together the longitudinal halves of the back jaw, I may employ any suitable equivalent, such as a taper cotter pin, clip, screw cap or the like.

As an alternative arrangement, the chain stay sections may be disposed inwardly,
10 with the sections connected with the back stays coming upon the outside, so that in this case, when the clamping or lock are unscrewed off the axles, the back stays and their fork end sections may be lifted away laterally from the machine, leaving the wheel spindle and wheel still carried in the chain stay sections and the chain adjusting fittings undisturbed.

15 Having now particularly described and ascertained the nature of my said invention, and in what manner the same is to be performed, I declare that what I claim is:—

First:—A cycle fork end or back jaw fitting, comprising two longitudinal halves or sections, connected or carried respectively to or by the adjacent ends of a chain stay and back stay of a bicycle framing, and clamped together by a nut or equivalent
20 fastening, or by the nut which locks the spindle of a wheel to the said fitting, or between a nut and a shoulder or collar on the said wheel spindle.

Secondly:—A cycle fork end or back jaw fitting, comprising two longitudinal halves or sections, each provided with a lug, socket or equivalent junction by which
25 they are respectively connected to the ends of a cycle framing chain stay and back stay, whilst their inner and opposed faces are coincidently recessed to form a chamber or box wherein the chain adjusting draw bolt is located and their outer walls are slotted to admit of the said sections being passed onto the spindle of a wheel to which they are secured and at the same time clamped together by being
30 forced against a shoulder or equivalent abutment on the said spindle by the screwing up of a nut, substantially as described and set forth.

Thirdly:—The combination with a cycle fork end or back jaw fitting comprising two longitudinally separated, interiorly recessed or chambered and slotted sections, clamped together by a nut on the extending end of a shouldered wheel spindle
35 passing therethrough, of chain adjusting fittings, comprising a draw bolt through the head of which the aforesaid wheel spindle passes, a bearing plate, and a sleeved nut, arranged and operating substantially as described and set forth.

Dated this 22nd day of February 1898.

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